



UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES

OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOTENIBLE EN MANIZALES

RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES



ESTACIÓN METEOROLÓGICA LA PALMA

CÓDIGO: EMM-09

JULIO DE 2011

RESUMEN DIARIO Y MENSUAL DE VARIABLES METEOROLÓGICAS

Variables Día	Temperatura del Aire (°C)			V.V. (m/s)		P.B. (HPa)	Humedad Relativa (%)			LI. (mm)	Radiación Solar (W/m ²)		ET. (mm)
	Máxima	Media	Mínima	Máxima	Media	Media	Máxima	Media	Mínima	Suma	Máxima	Media	Suma
1	23.5	18.5	15.4	1.8	0.2	813.2	98.0	92.7	79.0	2.4	1280.0	382.2	2.8
2	21.8	18.4	16.5	2.7	0.1	812.9	97.0	92.7	83.0	5.0	1315.0	229.0	1.7
3	25.0	19.7	15.7	4.0	0.3	811.8	97.0	87.9	68.0	0.2	1223.0	507.1	3.9
4	23.0	19.2	16.7	2.7	0.2	811.9	97.0	91.6	80.0	0.0	1234.0	255.2	2.0
5	24.4	19.9	15.9	2.7	0.3	812.1	98.0	87.7	69.0	0.0	1146.0	391.2	3.0
6	22.2	18.3	16.2	5.4	0.3	813.0	98.0	94.6	78.0	6.2	951.0	241.6	1.8
7	25.4	19.6	15.3	1.8	0.2	812.9	97.0	85.8	63.0	0.0	1264.0	493.8	3.7
8	24.9	20.5	16.7	3.1	0.3	810.6	97.0	85.0	64.0	0.0	1137.0	431.5	3.6
9	25.8	20.6	17.2	2.7	0.2	810.5	95.0	85.2	63.0	0.0	1216.0	365.6	2.9
10	24.9	20.4	17.5	3.6	0.2	810.8	97.0	87.1	67.0	0.4	1181.0	360.0	2.8
11	25.0	20.3	17.2	2.7	0.2	812.2	97.0	86.5	63.0	0.0	1125.0	339.2	2.8
12	21.7	18.6	16.5	2.7	0.3	813.9	97.0	92.6	81.0	4.4	884.0	219.9	1.9
13	19.2	16.9	15.5	2.2	0.2	815.5	98.0	97.2	93.0	8.2	744.0	167.2	1.2
14	21.1	17.2	15.1	2.7	0.2	815.9	98.0	94.8	75.0	9.8	796.0	194.7	1.4
15	21.3	17.2	14.7	1.8	0.1	816.4	98.0	94.4	74.0	25.8	1234.0	305.5	2.3
16	24.1	18.8	15.7	2.7	0.2	814.1	98.0	92.5	69.0	0.0	1288.0	330.1	2.5
17	23.8	19.2	16.6	2.2	0.2	813.3	98.0	92.5	68.0	2.8	1310.0	315.8	2.4
18	23.0	18.9	16.3	2.7	0.3	813.7	98.0	91.5	75.0	4.6	1194.0	334.2	2.5
19	25.3	19.6	15.9	2.7	0.2	812.8	98.0	89.5	66.0	0.8	1181.0	369.1	3.0
20	24.6	20.2	17.3	2.2	0.3	812.1	97.0	85.5	69.0	0.2	1213.0	333.0	2.7
21	25.3	20.4	16.5	3.1	0.2	811.3	95.0	83.6	60.0	0.0	991.0	423.3	3.4
22	25.7	20.8	17.2	2.7	0.2	810.8	97.0	83.6	63.0	0.0	1267.0	444.4	3.7
23	25.1	20.6	18.0	1.8	0.2	811.5	96.0	84.7	67.0	5.6	1208.0	321.9	2.7
24	25.3	20.7	17.9	1.8	0.2	811.5	93.0	79.0	61.0	0.0	1137.0	360.7	2.7
25	25.6	20.4	17.4	1.8	0.1	809.2	92.0	80.1	62.0	0.4	1195.0	380.0	3.3
26	25.0	19.9	16.7	1.8	0.2	809.2	97.0	87.7	70.0	0.0	1083.0	311.2	2.4
27	25.1	19.4	16.7	1.8	0.2	809.7	97.0	90.1	69.0	4.6	1011.0	263.4	2.2
28	22.3	18.8	16.5	2.7	0.3	812.4	98.0	90.8	74.0	22.6	900.0	226.0	1.7
29	18.6	16.2	15.2	2.7	0.3	815.2	98.0	97.6	92.0	28.8	663.0	162.4	1.1
30	18.6	16.2	14.3	1.3	0.1	815.6	98.0	97.9	96.0	16.0	592.0	215.8	1.5
31	21.1	17.8	14.9	2.7	0.2	814.6	98.0	93.7	77.0	0.0	1368.0	339.1	2.4
Mensual	25.8	19.1	14.3	5.4	0.2	812.6	98.0	89.5	60.0	148.8	1368.0	323.0	77.9

Convenciones: V.V.: Velocidad del Viento P.B.: Presión Barométrica LI.: Lluvia diaria ET.: Evapotranspiración. Nota: Datos resaltados en rojo están incompletos.



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JULIO DE 2011

JORNADA DIURNA - DIRECCIÓN DEL VIENTO SEGÚN LA ROSA DE LOS VIENTOS (Frecuencia relativa)

Día	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSO	SO	OSO	O	ONO	NO	NNO
1	15%	15%	1%	0%	1%	1%	0%	15%	1%	0%	6%	9%	4%	11%	9%	13%
2	12%	1%	0%	3%	9%	1%	0%	13%	6%	15%	16%	4%	3%	8%	2%	9%
3	11%	1%	4%	2%	1%	1%	6%	2%	2%	7%	22%	6%	7%	12%	6%	10%
4	8%	2%	1%	3%	12%	12%	9%	0%	13%	1%	1%	4%	3%	8%	14%	8%
5	8%	1%	1%	0%	0%	0%	0%	14%	4%	12%	8%	11%	9%	17%	10%	4%
6	7%	0%	7%	1%	1%	6%	17%	5%	4%	3%	7%	10%	10%	8%	8%	7%
7	5%	6%	1%	1%	0%	3%	0%	0%	1%	4%	32%	14%	3%	5%	4%	20%
8	4%	1%	1%	1%	0%	0%	3%	6%	3%	9%	7%	19%	19%	7%	12%	6%
9	8%	6%	1%	0%	1%	0%	5%	5%	5%	12%	11%	12%	10%	8%	10%	7%
10	10%	4%	2%	5%	0%	0%	8%	11%	3%	15%	7%	3%	3%	5%	13%	11%
11	8%	2%	1%	0%	0%	0%	1%	2%	10%	16%	13%	15%	9%	9%	8%	6%
12	1%	0%	0%	0%	0%	26%	0%	15%	6%	1%	11%	15%	10%	7%	6%	1%
13	6%	6%	0%	0%	10%	1%	1%	9%	1%	5%	9%	29%	6%	10%	3%	5%
14	6%	8%	1%	0%	14%	3%	19%	18%	7%	2%	10%	6%	1%	1%	1%	3%
15	21%	1%	1%	1%	1%	1%	0%	24%	0%	1%	1%	4%	9%	13%	13%	9%
16	6%	2%	1%	0%	1%	0%	1%	10%	1%	1%	1%	26%	8%	10%	26%	6%
17	15%	2%	4%	5%	3%	4%	1%	1%	10%	1%	5%	13%	13%	6%	4%	10%
18	3%	1%	1%	0%	1%	0%	2%	6%	6%	21%	13%	7%	10%	10%	16%	3%
19	11%	1%	0%	0%	1%	3%	18%	3%	2%	5%	11%	10%	9%	10%	7%	10%
20	7%	3%	7%	3%	2%	1%	13%	8%	2%	12%	13%	10%	8%	3%	3%	6%
21	5%	5%	0%	1%	2%	0%	3%	7%	17%	3%	8%	14%	14%	4%	15%	3%
22	13%	1%	0%	1%	1%	5%	1%	1%	13%	4%	16%	13%	13%	7%	7%	6%
23	13%	3%	6%	2%	9%	3%	2%	2%	1%	1%	6%	9%	6%	7%	14%	15%
24	10%	6%	1%	3%	7%	1%	1%	8%	8%	8%	7%	8%	9%	12%	3%	8%
25	10%	8%	3%	1%	6%	6%	0%	0%	8%	3%	2%	12%	20%	6%	8%	7%
26	2%	1%	0%	1%	0%	0%	0%	2%	10%	4%	15%	18%	19%	13%	5%	10%
27	11%	3%	1%	1%	1%	0%	1%	11%	10%	8%	6%	24%	10%	7%	3%	3%
28	11%	7%	0%	3%	1%	10%	0%	8%	12%	16%	12%	5%	2%	6%	4%	4%
29	3%	0%	0%	0%	0%	6%	11%	15%	7%	9%	13%	15%	3%	1%	8%	10%
30	16%	1%	1%	0%	22%	2%	10%	0%	1%	0%	1%	2%	5%	19%	19%	2%
31	6%	3%	1%	1%	1%	1%	3%	2%	10%	7%	17%	24%	10%	6%	4%	6%
Mensual	9%	3%	2%	1%	3%	3%	4%	7%	6%	7%	10%	12%	9%	8%	9%	7%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	OSO	SO	N	O	NO	ONO	NNO	SSE	SSO	S	SE	E	NNE	ESE	NE	ENE
F. R.	12%	10%	9%	9%	9%	8%	7%	7%	7%	6%	4%	3%	3%	3%	2%	1%

Convenciones: R. V.: Rosa de los Vientos F. R.: Frecuencia Relativa. Nota: Datos resaltados en rojo están incompletos.



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JORNADA NOCTURNA - DIRECCIÓN DEL VIENTO SEGÚN LA ROSA DE LOS VIENTOS (Frecuencia relativa)

DÍA	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSO	SO	OSO	O	ONO	NO	NNO
1	0%	0%	0%	0%	0%	2%	24%	48%	2%	6%	13%	3%	3%	0%	0%	0%
2	0%	0%	0%	0%	0%	0%	12%	18%	51%	1%	4%	14%	0%	0%	0%	0%
3	0%	0%	0%	0%	0%	0%	0%	8%	59%	7%	10%	7%	9%	0%	0%	0%
4	0%	3%	0%	0%	14%	19%	10%	13%	2%	19%	10%	6%	0%	0%	3%	1%
5	0%	0%	0%	0%	0%	0%	17%	42%	4%	1%	3%	5%	2%	26%	0%	0%
6	0%	16%	0%	0%	0%	0%	4%	33%	14%	6%	15%	5%	7%	0%	0%	0%
7	0%	0%	0%	0%	0%	0%	1%	7%	21%	1%	44%	27%	0%	0%	0%	0%
8	0%	0%	0%	0%	0%	0%	6%	7%	51%	33%	0%	1%	1%	0%	0%	0%
9	0%	0%	0%	0%	0%	0%	24%	13%	17%	5%	15%	0%	0%	0%	13%	13%
10	0%	0%	0%	0%	0%	1%	1%	63%	6%	23%	3%	1%	1%	0%	0%	0%
11	0%	0%	0%	0%	0%	0%	0%	1%	27%	31%	15%	26%	1%	0%	0%	0%
12	1%	0%	0%	0%	0%	1%	1%	33%	35%	5%	13%	5%	1%	3%	0%	1%
13	0%	0%	0%	0%	0%	0%	0%	43%	7%	16%	29%	3%	1%	0%	0%	0%
14	0%	0%	0%	0%	0%	2%	33%	18%	4%	8%	14%	19%	1%	0%	0%	0%
15	0%	0%	0%	0%	1%	1%	0%	19%	12%	1%	6%	5%	55%	1%	0%	0%
16	0%	0%	0%	0%	0%	0%	0%	4%	0%	1%	13%	33%	48%	0%	0%	0%
17	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	69%	19%	9%	0%	0%	0%
18	0%	0%	0%	0%	0%	0%	3%	32%	8%	13%	32%	3%	10%	0%	0%	0%
19	0%	0%	0%	0%	0%	1%	15%	1%	0%	0%	7%	32%	28%	0%	15%	0%
20	0%	0%	17%	0%	0%	1%	6%	44%	11%	3%	10%	4%	0%	0%	4%	0%
21	0%	0%	0%	0%	0%	0%	6%	39%	15%	13%	7%	13%	4%	0%	3%	0%
22	0%	0%	0%	0%	0%	0%	0%	44%	6%	0%	0%	50%	0%	0%	0%	0%
23	17%	0%	0%	0%	0%	0%	8%	46%	7%	3%	12%	6%	1%	0%	0%	0%
24	0%	0%	0%	0%	0%	0%	1%	42%	26%	3%	23%	3%	1%	0%	0%	0%
25	0%	0%	0%	0%	0%	0%	6%	11%	17%	13%	33%	13%	8%	0%	0%	0%
26	0%	0%	0%	0%	0%	0%	0%	44%	6%	0%	0%	0%	50%	0%	0%	0%
27	0%	0%	0%	0%	1%	17%	8%	17%	1%	6%	1%	2%	48%	0%	0%	0%
28	0%	0%	0%	1%	2%	1%	16%	22%	8%	4%	11%	30%	5%	1%	0%	0%
29	0%	1%	0%	0%	1%	1%	23%	6%	3%	5%	36%	22%	3%	0%	0%	0%
30	0%	0%	0%	2%	4%	23%	2%	11%	0%	0%	0%	24%	0%	1%	33%	0%
31	0%	0%	0%	0%	0%	0%	0%	38%	3%	2%	0%	52%	4%	0%	0%	0%
Mensual	1%	1%	1%	0%	1%	2%	7%	25%	14%	7%	14%	14%	10%	1%	2%	0%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	SSE	SO	OSO	S	O	SSO	SE	NO	ESE	ONO	E	NNE	N	NE	NNO	ENE
F. R.	25%	14%	14%	14%	10%	7%	7%	2%	2%	1%	1%	1%	1%	1%	0%	0%

Convenciones: R. V.: Rosa de los Vientos F. R.: Frecuencia Relativa. Nota: Datos resaltados en rojo están incompletos.